

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-5 (Cancelled)

Claim 6 (Currently amended): [[A]] An isolated or purified truncated *Bacillus* pullulanase comprising a deletion of about 100 amino acids from the amino terminus of a pullulanase obtainable from the mature form of the *Bacillus deramificans* pullulanase of SEQ ID NO:2, wherein said truncated pullulanase ~~comprises a conserved Y region, and is capable of~~ catalyzing the hydrolysis of an alpha-1,6-glucosidic bond.

Claim 7 (Currently amended): [[A]] An isolated or purified truncated *Bacillus* pullulanase comprising a deletion of about 200 amino acids from the amino terminus of a pullulanase obtainable from the mature form of the *Bacillus deramificans* pullulanase of SEQ ID NO:2, wherein said truncated pullulanase ~~comprises a conserved Y region, and is capable of~~ catalyzing the hydrolysis of an alpha-1,6-glucosidic bond.

Claim 8 (Currently amended): [[A]] An isolated or purified truncated *Bacillus* pullulanase comprising a deletion of about 300 amino acids from the amino terminus of a pullulanase obtainable from the mature form of the *Bacillus deramificans* pullulanase of SEQ ID NO:2, wherein said truncated pullulanase ~~comprises a conserved Y region, and is capable of~~ catalyzing the hydrolysis of an alpha-1,6-glucosidic bond.

Claim 9 (Currently amended): [[A]] An isolated or purified truncated *Bacillus* pullulanase comprising a deletion that is of 98 amino acids from the amino terminus of the mature form of the *Bacillus deramificans* pullulanase of SEQ ID NO:2, wherein said truncated pullulanase is capable of catalyzing the hydrolysis of an alpha-1,6-glucosidic bond.

Claim 10 (Currently amended): [[A]] An isolated or purified truncated *Bacillus* pullulanase comprising a deletion that is of 102 amino acids from the amino terminus of the mature form of the [[B.]] *Bacillus deramificans* pullulanase of SEQ ID NO:2, wherein said truncated pullulanase is capable of catalyzing the hydrolysis of an alpha-1,6-glucosidic bond.

Claim 11 (Cancelled)

Claim 12 (Withdrawn): A modified *Bacillus* pullulanase which is capable of hydrolysis of an alpha-1,6-glucosidic bond, wherein the modification is an addition of one amino acid to the amino terminus of a mature pullulanase amino acid sequence obtainable from a *Bacillus deramificans*, wherein the additional amino acid at the amino terminus is an alanine.

Claim 13 (Cancelled)

Claim 14 (Currently amended): [[A]] An isolated or purified truncated *Bacillus* pullulanase produced by a method comprising the steps of

a) obtaining a recombinant host cell comprising nucleic acid encoding [[a]] the mature form of the *Bacillus deramificans* pullulanase of SEQ ID NO:2 said nucleic acid having at least 90 % identity to the polynucleotide sequence as shown in SEQ ID NO:1,

b) culturing said host cell under conditions suitable for the production of [[a]] the truncated pullulanase, and

c) recovering the truncated pullulanase, wherein the truncated *Bacillus* pullulanase comprises a deletion of about 100 98 or 102 amino acids from the amino terminus of [[a]] the mature form of the *Bacillus deramificans* pullulanase of SEQ ID NO:2, wherein said truncated pullulanase comprises a conserved Y region, and is capable of catalyzing the hydrolysis of an alpha-1,6-glucosidic bond.

Claim 15 (Currently amended): The pullulanase of Claim 14 wherein said host cell is [[B.]] *Bacillus licheniformis* which comprises a first gene encoding Carlsberg protease and a

second gene encoding endo Glu C protease, the first and/or second gene which codes for the protease(s) having been altered such that the protease activity is essentially eliminated.

Claims 16-26 (Cancelled)

Claim 27 (Currently amended): ~~An enzymatic composition comprising [[a]] an isolated or purified truncated *Bacillus deramificans* pullulanase selected from~~

a) ~~a truncated pullulanase comprising a deletion of up to about 100 amino acids from the amino terminus of the mature form of the a-*Bacillus deramificans* *Bacillus deramificans* pullulanase of SEQ ID NO:2,~~

b) ~~a truncated pullulanase comprising a deletion of up to about 200 amino acids from the amino terminus of the mature form of the a-*Bacillus deramificans* *Bacillus deramificans* pullulanase of SEQ ID NO:2, and~~

c) ~~a truncated pullulanase comprising a deletion of up to about 300 amino acids from the amino terminus of the mature form of the a-*Bacillus deramificans* *Bacillus deramificans* pullulanase of SEQ ID NO:2,~~

d) ~~a truncated pullulanase comprising a deletion of 98 amino acids from the amino terminus of the mature form of the *Bacillus deramificans* pullulanase of SEQ ID NO:2, and~~

e) ~~a truncated pullulanase comprising a deletion of 102 amino acids from the amino terminus of the mature form of the *Bacillus deramificans* pullulanase of SEQ ID NO:2,~~

wherein said truncated pullulanase ~~comprises a conserved Y position and is capable of~~ catalyzing the hydrolysis of an alpha-1,6-glucosidic bond.

Claim 28 (Currently amended): ~~The An enzymatic composition [[of]] comprising the truncated pullulanase of Claim [[27]] 6 wherein the truncated pullulanase has a deletion of amino acids from the amino terminus of up to about 100 amino acids.~~

Claim 29 (Currently amended): ~~The An enzymatic composition [[of]] comprising the truncated pullulanase of Claim [[27]] 7 wherein the truncated pullulanase has a deletion of amino acids from the amino terminus of up to about 200 amino acids.~~

Claim 30 (Currently amended): ~~The An enzymatic composition [[of]] comprising the truncated pullulanase of Claim[[27]] 8 wherein the truncated pullulanase has a deletion of amino acids from the amino terminus of up to about 300 amino acids.~~

Claim 31 (Currently amended): ~~An enzymatic composition comprising the truncated pullulanase of Claim 9, wherein the pullulanase has the amino acid sequence as shown in SEQ ID NO:2 beginning at amino acid residue 99, a glutamic acid.~~

Claim 32 (Currently amended): ~~An enzymatic composition comprising the truncated pullulanase of Claim 10, wherein the pullulanase has the amino acid sequence as shown in SEQ ID NO:2 beginning at amino acid residue 103, a glutamic acid.~~

Claim 33 (Currently amended): ~~The composition of Claim 27 further comprising an enzyme selected from the group consisting of a glucoamylase, an alpha-amylase, a beta-amylase, an alpha-glucosidase, an isoamylase, a cyclomaltodextrin, a glucotransferase, a beta-glucanase, a glucose isomerase, a saccharifying enzymes enzyme, and/or and enzymes an enzyme which cleave cleaves glucosidic bonds.~~

Claim 34 (Original): The composition of Claim 27 further comprising a glucoamylase.

Claim 35 (Original): The composition of Claim 34 wherein the glucoamylase is obtainable from an *Aspergillus* strain.

Claim 36 (Previously presented): The composition of Claim 35 wherein the *Aspergillus* strain is selected from *Aspergillus niger*, *Aspergillus awamori* and *Aspergillus foetidus*.

Claim 37 (Original): The composition of Claim 27 wherein said composition is in a solid form.

Claim 38 (Original): The composition of Claim 27 wherein said composition is in a liquid form.

Claim 39 (Currently amended): The composition of Claim 27 wherein said composition comprises at least 60% ~~truncated~~ pullulanase activity.

Claim 40 (Currently amended): The composition of Claim 27 at least 80% ~~truncated~~ pullulanase activity.

Claims 41-55 (Cancelled)

Claim 56 (Currently amended): The truncated *Bacillus* pullulanase ~~produced according to the method~~ of claim 14, wherein the nucleic acid sequence encoding the mature pullulanase is SEQ ID NO: 1.

Claims 57-66 (Cancelled)

Claim 67 (Currently amended): [[A]] An isolated or purified truncated *Bacillus* pullulanase produced by culturing a recombinant host cell in a culture medium under conditions suitable for the production of said truncated pullulanase, wherein said host cell comprises nucleic acid encoding [[a]] the mature form of the *Bacillus deramificans* pullulanase of SEQ ID NO:2, said nucleic acid having at least 90% identity to the polynucleotide sequence as shown in SEQ ID NO:1, wherein said truncated pullulanase ~~comprises a conserved Y region and~~ is capable of catalyzing the hydrolysis of an alpha-1,6-glucosidic bond, and wherein said truncated pullulanase comprises a deletion of ~~about 100~~ 98 or 102 amino acids from the N-terminus of the mature pullulanase.

Claim 68 (Currently amended): A truncated *Bacillus* pullulanase pullulanase according to claim 67, wherein said truncated pullulanase is recovered from the culture medium.

Claim 69 (Currently amended): A truncated *Bacillus* pullulanase according to claim 67, wherein said host cell is a *Bacillus licheniformis* host cell.

Claim 70 (Currently amended): A truncated *Bacillus* pullulanase according to claim 67, wherein the nucleic acid sequence encoding the mature pullulanase is SEQ ID NO: 1.

Claim 71 (Cancelled)

Claim 72 (Currently amended): A truncated *Bacillus* pullulanase according to claim [[71]] 67, wherein said truncated pullulanase comprises a deletion of 98 amino acids from the N-terminus of SEQ ID NO:2.

Claim 73 (Currently amended): A truncated *Bacillus* pullulanase according to claim [[71]] 67, wherein said truncated pullulanase comprises a deletion of 102 amino acids from the N-terminus of SEQ ID NO:2.